



Gray Freshwater Center

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Freshwater Society is a non-profit organization dedicated to educating and inspiring people to value, conserve and protect all freshwater resources.

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The draft Minnesota Nutrient Reduction Strategy proposes steps to reduce the nitrogen and phosphorus pollution flowing from farms, sewage treatment plants and industry. That pollution contaminates Minnesota lakes, streams and groundwater, and causes substantial damage to the Gulf of Mexico and Lake Winnipeg.

The Freshwater Society supports this effort by the Minnesota Pollution Control Agency to begin reducing that pollution with a phased approach that sets clear short-term goals:

- Cutting nitrogen and phosphorus flows to the Mississippi River by 20 percent and 35 percent, respectively, by 2025.
- Cutting nitrogen and phosphorus flows to the Red River of the North by 13 percent and 10 percent, respectively by 2025.

We have serious questions about the plan and suggestions for changes. Those suggestions mainly deal with putting harder numbers and price tags on the plan's recommendations so progress can more easily be tracked between now and 2025 and sterner measures to be enacted if the plan's calls for voluntary efforts do not yield results.

First, we applaud the U.S. Environmental Protection Agency for insisting that states along the Mississippi begin making good on the states' 2008 promise to reduce both nitrogen and phosphorus pollution of the Mississippi by 45 percent. And we applaud the Minnesota Pollution Control Agency for proposing a serious plan that, if successful, will lead to a needed shift of momentum and make a significant down payment on that promised 45 percent reduction.

This draft nutrient reduction strategy builds on a very significant MPCA report on nitrogen pollution, "Nitrogen in Minnesota Surface Waters," that deeply researched the issue of nitrogen pollution. That report estimated that 73 percent of the nitrogen flowing to surface waters across the state comes from agricultural sources: tile drainage from cropland, groundwater flowing from cropland, overland runoff from cropland and runoff from feedlots.

"Nitrogen in Minnesota Surface Waters" also spelled out the scope of the problem, making it clear that very significant, very costly, changes eventually would be required on millions of acres of farmland to address the nitrogen pollution problem. "Meaningful N reductions to surface waters at regional scales cannot be achieved by solely targeting small 'hot spots' based on geographically sensitive area or by targeting 'bad actors,'" that report said.

Ever since the Clean Water Act was enacted in 1972, the substantial progress this country has achieved in reducing pollution to big rivers has mostly come from tightening, and then tightening again, restrictions put on “point source” polluters – sewage treatment plants, industries and municipal storm water systems that require permits to discharge pollutants. Non-point polluters, especially agriculture, have gotten off easy as other industries successfully reduced their pollution.

We recognize that some agricultural producers conscientiously balance profitability against downstream pollution when they fertilize and till their fields. But we applaud this draft Nutrient Reduction Strategy for proposing significant reductions in overall losses of nitrogen and phosphorus from Minnesota farms.

The plan says agriculture contributed 87 percent of the 1980-1996 baseline estimate of nitrogen flowing into the Mississippi, and it proposes a 92 percent reduction in those nitrogen losses from agriculture by 2025. For phosphorus, the strategy says agriculture contributed 41 percent of the baseline flow, and it proposes a 21 percent reduction in agricultural losses.

Those numbers are easy to derive from scorecards that are part of the draft Nutrient Reduction Strategy. But those kinds of nutrient flows are difficult to measure as they occur. The year 2025 could arrive, and the huge fluctuations in pollution loads caused by wet years and dry years or the slow movement of nitrogen through groundwater could make it difficult or impossible for scientists to say whether Minnesota has achieved its goals.

That is why the Freshwater Society urges that the draft Nutrient Reduction Strategy be more explicit in spelling out the measures it is asking producers to adopt, the costs of adopting them, and who would pay those costs. We urge the MPCA to insist on rigorous research on the efficacy of fertilizer Best Management Practices and the extent to which producers adopt them.

And the strategy, while proposing voluntary adoption of the agricultural fertilizer changes, should put some proposal on the table for requiring those changes if producers do not choose to adopt them.

It is possible to conceive of several such mechanisms: The “required and not voluntary” Agricultural Management Area cooperatives that the 2011 Minnesota Water Sustainability Framework proposed; nitrogen use and reporting rules such as some Nebraska Groundwater Management Areas impose; perhaps a high tax on fertilizer with a rebate for proven compliance with best management practices.

The Nutrient Reduction Strategy should make clear to Minnesota producers that Minnesota is not the only state proposing significant reductions in the losses of nitrogen and phosphorus to surface waters. Downstream agricultural competitors also have been asked, or will be asked, to change their practices.

The biggest chunk of the nitrogen reductions the first phase of the draft Nutrient Reduction Strategy asks producers to make would come from following University of Minnesota Best Management Practices on the amount of nitrogen fertilizer and manure they apply to their corn crops. But it is not until deep within the draft strategy -- in the fifth chapter – that the strategy puts a number on nitrogen reduction being proposed.

The strategy, assuming nitrogen prices and corn prices that prevailed in 2009, urges that producers planting corn after a previous year’s crop of soybeans apply no more than 111 pounds of nitrogen per acre. That compares to

a 140-pounds-per-acre average application rate that producers who planted corn-after-beans in 2009 reported in a survey commissioned by the Minnesota Department of Agriculture.

That is a significant reduction, but one that might save producers money if they adopt it and if the Best Management Practices formula for maximizing producers' return on their fertilizer investments is correct.

Producers may, or may not, be persuaded to cut their fertilizer applications by that amount voluntarily. But the Freshwater Society believes the Nutrient Reduction Strategy should be open and explicit about the proposed reductions in fertilizer applications the strategy proposes. That will allow fertilizer sales to be monitored to determine if producers are making the recommended reductions.

The strategy also should be more explicit about how the state and federal governments propose to pay the high costs estimated for achieving significant reductions in both point-source and nonpoint-source nitrogen and phosphorus pollution.

The strategy estimates – again the numbers are not spelled out until Chapter 5 -- that costs for sewage treatment plants to achieve varying levels of phosphorus reduction would be between \$38 million and \$129 million per year. For agriculture, the strategy estimates costs of \$133 million per year.

Those numbers deserve greater prominence in the strategy. And the strategy should attempt to project how they would be paid. It is clear that the Clean Water Fund alone is inadequate to cover the expected costs.

In summary, the Freshwater Society believes the draft Nutrient Reduction Strategy is good, but not perfect. We urge that the draft be amended to be much more explicit on a number of issues, including costs. We urge the EPA and MPCA to begin anticipating what should be the state response if the voluntary changes in farm fertilization and land-use practices the draft proposes are not widely adopted.